Claims 53 and 64 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Balakrishnan in view Shen and Paik.

Claims 56 and 67 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Balakrishnan in view Shen and Fling.

Applicants respectfully traverse these rejections in view of the following comments.

Response To Examiner's Interview Summary

As indicated in the Examiner's Interview Summary, on December 28, 2004, Applicants' counsel telephoned the Examiner to point out that the initial Office Action issued on November 18, 2004 did not consider Applicants' Preliminary Amendment. As a result, the Examiner agreed to withdraw the initial Office Action and issue a further Office Action responsive to the Preliminary Amendment.

Discussion of Balakrishnan

Claims 25-29, 31, 32, 36-40, 42, and 43 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Balakrishnan. This rejection is respectfully traversed. An anticipation rejection requires that each and every element of the claimed invention as set forth in the claim be provided in the cited reference. See *Akamai Technologies Inc. v. Cable & Wireless Internet Services Inc.*, 68 USPQ2d 1186 (CA FC 2003), and cases cited therein. As discussed in detail below, Balakrishnan does not meet the requirements for an anticipation rejection.

Balakrishnan discloses methods and apparatus for dynamically allocating available bandwidth among multiple encoders in such a manner as to maximize and equalize the quality of data output by all of the encoders, while also preventing overflow or underflow of encoder and decoder buffers (Abstract).

In rejecting claims 25 and 36, the Examiner has indicated that Applicants' claimed subject matter of "for at least one current picture, determining whether the associated spatial activity is below a lower threshold, and if so, increasing the associated temporal activity thereof, and adjusting the initial bit rate demand thereof according to the increased temporal activity thereof" is disclosed in Balakrishnan at Column 1, lines 43-59. In discussing this passage of

Balakrishnan, the Examiner indicates that "note that pictures with more spatially complex scenes need an increase in bit-rate transmission to transmit the detailed scenes with better quality than transmitting at a lower bit rate and if the pictures have simple scenes, then a lower bit-rate transmission would be used to conserve bits" (Office Action, page 3). Applicants respectfully submit that the disclosure at Column 1, lines 43-59 of Balakrishnan does not disclose or remotely suggest Applicants' claimed subject matter.

Applicants' claims 25 and 36 both specify that for at least one current picture, it is determined whether the associated spatial activity is below a lower threshold, and if so, increasing the associated temporal activity thereof, and adjusting the initial bit rate demand thereof according to the increased temporal activity thereof. The passage of Balakrishnan relied on by the Examiner merely indicates that "pictures corresponding to spatially complex scenes and/or scenes with motion require more bits to encode them than do pictures corresponding to spatially simple scenes with little motion" (Col. 1, lines 53-55). There is no disclosure or suggestion in Balakrishnan of any determination of whether the spatial activity of a picture is below a threshold, as claimed by Applicants. Further, there is no disclosure or suggestion in Balakrishnan of increasing the associated temporal activity of a picture in accordance with a determination that the spatial activity is below a threshold, and adjusting the bit rate demand according to the increased temporal activity, as set forth in Applicants' claims 25 and 36.

Applicants' invention according to claims 25 and 36 utilizes a correlation between spatial and temporal activity of a picture in determining the bit rate demand, in particular, by increasing the associated temporal activity of a picture when it is determined that the spatial activity is below a threshold. Balakrishnan does not disclose any type of correlation between spatial and temporal activity in computing the bit rate demand. Instead, Balakrishnan merely discloses what was already well-known in the art, namely that spatially complex scenes require more bits than spatially simple scenes with no motion.

As Balakrishnan does not disclose each and every element of the invention as claimed in independent claims 25 and 36, the rejections under 35 U.S.C. § 102(e) are believed to be improper, and withdrawal of the rejections is respectfully requested. See, *Akamai Technologies*

Inc., supra.

Discussion of Shen

Independent claims 47 and 58 and dependent claims 34 and 45 are rejected as being unpatentable over Balakrishnan in view of Shen.

In rejecting claims 34, 45, 47 and 58, the Examiner acknowledges that Balakrishnan does not disclose Applicants' claimed subject matter of: "for at least one current picture, adjusting the initial bit rate demand thereof upwards when an associated brightness level is less than a lower threshold". The Examiner relies on Shen as disclosing this subject matter of claims 34, 45, 47 and 58 (see, Office Action, pages 5-6). In particular, the Examiner relies on Column 16, lines 37-46 of Shen. Applicants respectfully submit that the Examiner has misinterpreted the disclosure of Shen.

Shen discloses selecting a coding mode (inter-frame or intra-frame) for P- and B-picture macroblocks by comparing the luminance energy of an original macroblock to the energy of a luminance interframe prediction residual macroblock. In particular, if the original macroblock has less energy, interframe coding is used (column 16, lines 37-46). However, nothing is disclosed in Shen regarding the use of luminance to determine the quantization level of the macroblock or bit allocation. Moreover, once a mode is decided for coding a macroblock in Shen, there is no setting of an initial bit rate demand, then adjusting the bit rate demand based on an associated brightness level, as set forth in Applicants' claims 34, 45, 47, and 58.

Further, Shen does not disclose or remotely suggest any determination of whether a brightness level of a picture is less than a threshold, as claimed by Applicants. In fact, there is no disclosure or suggestion in Shen of providing or determining a brightness or luminance threshold, or of adjusting the bit rate demand upwards in response to a determination that the brightness level is less than such a threshold, as claimed by Applicants.

Accordingly, Shen does not disclose or suggest adjusting the initial bit rate demand of a current picture upwards when an associated brightness level is less than a lower threshold, as claimed by Applicants in claims 34, 45, 47, and 58. Rather, Shen merely discloses using the

luminance energy of a macroblock for making <u>a coding mode decision</u> (i.e., for choosing between intra-frame encoding and inter-frame encoding for the macroblock).

Therefore, contrary to the Examiner's assertions, Shen does not cure the deficiencies of Balakrishnan.

Applicants respectfully submit that the present invention is not anticipated by and would not have been obvious to one skilled in the art in view of Balakrishnan, taken alone or in combination with Shen or any of the other prior art of record.
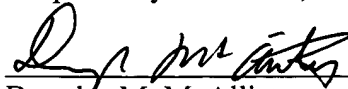
Further remarks regarding the asserted relationship between Applicant's claims and the prior art are not deemed necessary, in view of the foregoing discussion. Applicants' silence as to any of the Examiner's comments is not indicative of an acquiescence to the stated grounds of rejection.

Withdrawal of the rejections under 35 U.S.C. § 102(e) and 35 U.S.C. § 103(a) is therefore respectfully requested.

Conclusion

The Examiner is respectfully requested to reconsider this application, allow each of the pending claims and to pass this application on to an early issue. If there are any remaining issues that need to be addressed in order to place this application into condition for allowance, the Examiner is requested to telephone Applicants' undersigned attorney.

Respectfully submitted,

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